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1 Abstraction-guided synthesis of synchronization
Martin Vechev, Eran Yahav, Greta Yorsh
January 2010 **POPL '10:** Proceedings of the 37th annual ACM SIGPLAN-SIGACT symposium on Principles of programming languages
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We present a novel framework for automatic inference of efficient synchronization in concurrent programs, a task known to be difficult and error-prone when done manually. Our framework is based on abstract interpretation and can infer synchronization ...
Keywords: abstract interpretation, concurrency, synthesis

Also published in:
January 2010 **SIGPLAN Notices** Volume 45 Issue 1

2 Dynamic warp formation: Efficient MIMD control flow on SIMD graphics hardware
Wilson W. L. Fung, Ivan Sham, George Yuan, Tor M. Aamodt
June 2009 **Transactions on Architecture and Code Optimization (TACO)** , Volume 6 Issue 2
Publisher: ACM Request Permissions
Full text available: Pdf (2.41 MB) Additional Information: full citation, abstract, references, index terms
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Recent advances in graphics processing units (GPUs) have resulted in massively parallel hardware that is easily programmable and widely available in today's desktop and notebook computer systems. GPUs typicall use single-instruction, multiple-data (SIMD) ...

Keywords: GPU, SIMD, control flow, fine-grained multithreading

3 A survey of processors with explicit multithreading
Theo Ungerer, Borut Robič, Jurij Šilc
March 2003 **Computing Surveys (CSUR)** , Volume 35 Issue 1
Publisher: ACM Request Permissions
Full text available: Pdf (920.16 KB) Additional Information: full citation, abstract, references, cited by, index terms
Bibliometrics: Downloads (6 Weeks): 29, Downloads (12 Months): 447, Downloads (Overall): 5515, Citation Count: 2

Hardware multithreading is becoming a generally applied technique in the next generation of microprocessors. Several multithreaded processors are announced by industry or already into production in the areas of high-performance microprocessors, media, ...

Keywords: Blocked multithreading, interleaved multithreading, simultaneous multithreading

4 Tutorial: Compiling concurrent languages for sequential processors
Stephen A. Edwards
April 2003 **Transactions on Design Automation of Electronic Systems (TODAES)** , Volume 8 Issue 2
Publisher: ACM Request Permissions
Full text available: Pdf (771.65 KB) Additional Information: full citation, abstract, references, cited by, index terms, review
Bibliometrics: Downloads (6 Weeks): 10, Downloads (12 Months): 78, Downloads (Overall): 865, Citation Count: 12

Embedded systems often include a traditional processor capable of executing sequential code, but both control and data-dominated tasks are often more naturally expressed using one of the many domain-specific concurrent specification languages. This article ...

Keywords: Compilation, Esterel, Lustre, Petri nets, Verilog, code generation, communication, concurrency, dataflow, discrete-event, partial evaluation, sequential

5

Software thread integration for embedded system display applications
Alexander G. Dean
February 2006 **Transactions on Embedded Computing Systems (TECS)** , Volume 5 Issue 1
Publisher: ACM Request Permissions
Full text available: Pdf (1.40 MB) Additional Information: full citation, abstract, references, index terms

Bibliometrics: Downloads (6 Weeks): 12, Downloads (12 Months): 67, Downloads (Overall): 711, Citation Count: 0

Embedded systems require control of many concurrent real-time activities, leading to system designs that feature a variety of hardware peripherals, with each providing a specific, dedicated service. These peripherals increase system size, cost, weight, ...

Keywords: fine-grain concurrency, hardware to software migration, software thread integration

6 Tax-and-spend: democratic scheduling for real-time garbage collection
Joshua Auerbach, David F. Bacon, Perry Cheng, David Grove, Ben Biron, Charlie Gracie, Bill McCloskey, Aleksandar Micic, Ryan Sciampacone
October 2008 **EMSOFT '08:** Proceedings of the 7th ACM international conference on Embedded software
Publisher: ACM Request Permissions
Full text available: Pdf (909.29 KB) Additional Information: full citation, abstract, references, index terms

Bibliometrics: Downloads (6 Weeks): 6, Downloads (12 Months): 42, Downloads (Overall): 132, Citation Count: 4

Real-time Garbage Collection (RTGC) has recently advanced to the point where it is being used in production for financial trading, military command-and-control, and telecommunications. However, among potential users of RTGC, there is enormous diversity ...

Keywords: garbage collection, java, jvm, real time